

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 09196936  
PUBLICATION DATE : 31-07-97

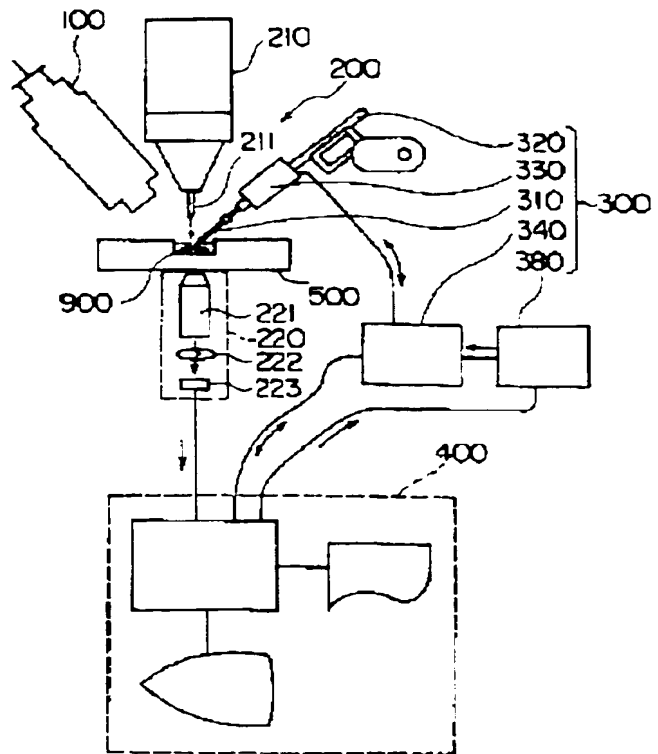
APPLICATION DATE : 12-01-96  
APPLICATION NUMBER : 08004237

APPLICANT : BUNSHI BIO PHOTONICS  
KENKYUSHO:KK;

INVENTOR : WATANABE AKIHIKO;

INT.CL. : G01N 37/00 G01B 11/30

TITLE : OPTICAL PROBE MICROSCOPE  
APPARATUS



ABSTRACT : PROBLEM TO BE SOLVED: To provide an optical probe microscope apparatus having high position resolving power and enabling microscopic observation and the measurement of electrophysiological characteristics.

SOLUTION: A scanning type proximity field microscope part 200 having an optical microscope part 100 observing the wide region image of a sample 900 and the optical probe 211 arranged in the upper part of the sample 900 and equipped with a light irradiation part 21 irradiating the sample 900 with light to observe the local image of the sample 900, a patch clamp measuring part 300 leading out the current generated in the sample 900 to perform recording and an analyzing part 400 collecting the local image of the sample obtained from the scanning type proximity field optical microscope part 200 and the electrophysiological data obtained from the patch clamp measuring part 300 at every light irradiation position of the scanning type proximity field optical microscope part 200 to analyze and record them and issuing the wavelength designation and scanning designation of irradiation light to the scanning type proximity field optical microscope part 200 are provided. The sample 900 in a submerged state housed in a housing 500 is observed.

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PUBLICATION NUMBER : 09211010  
PUBLICATION DATE : 15-08-97

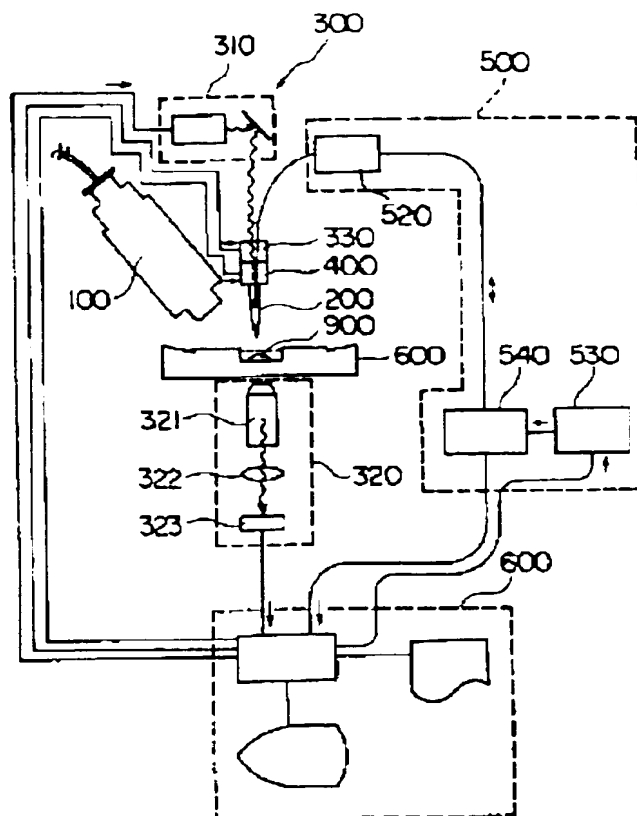
APPLICATION DATE : 06-02-96  
APPLICATION NUMBER : 08020125

APPLICANT : BUNSHI BIO PHOTONICS  
KENKYUSHO:KK;

INVENTOR : WATANABE AKIHIKO;

INT.CL. : G01N 37/00 G01N 27/416 G01N 33/48  
G01N 33/483

TITLE : ELECTROPHYSIOLOGICAL  
CHARACTERISTIC MEASURING  
DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To enable microscopic observation or the measurement of electrophysiological characteristics with high position resolving power by integrally analyzing local image data obtained by a scanning type proximity field optical microscope part and electrophysiological characteristic data obtained by a patch clamp measuring part.

SOLUTION: An optical microscope part 100 observes the wide area image of a sample 900. Then, the local image of the sample 900 is observed by a scanning type proximity field optical microscope part 300 while the sample is scanned by a glass micropipette electrode outputting evanescent light from the fine aperture of the leading end thereof. An electrode height setting part 400 sets the leading end of a glass micropipette electrode 200 to the distance within 200nm from the surface of the sample 900 and a current is led out through the glass micropipette electrode 200 by a patch clamp measuring part 500 to be recorded. These physiological data are collected and analyzed to be recorded and the whole of the apparatus is controlled by an analysis control part 600.

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